

# Prevalence of and factors associated with non-partner rape perpetration: findings from the UN Multi-country Cross-sectional Study on Men and Violence in Asia and the Pacific

Rachel Jewkes, Emma Fulu, Tim Roselli, Claudia Garcia-Moreno, on behalf of the UN Multi-country Cross-sectional Study on Men and Violence research team\*



## Summary

**Background** Rape perpetration is under-researched. In this study, we aimed to describe the prevalence of, and factors associated with, male perpetration of rape of non-partner women and of men, and the reasons for rape, from nine sites in Asia and the Pacific across six countries: Bangladesh, China, Cambodia, Indonesia, Papua New Guinea, and Sri Lanka.

**Methods** In this cross-sectional study, undertaken in January 2011–December 2012, for each site we chose a multistage representative sample of households and interviewed one man aged 18–49 years from each. Men self-completed questions about rape perpetration. We present multinomial regression models of factors associated with single and multiple perpetrator rape and multivariable logistic regression models of factors associated with perpetration of male rape with population-attributable fractions.

**Findings** We interviewed 10 178 men in our study (815–1812 per site). The prevalence of non-partner single perpetrator rape varied between 2·5% (28/1131; rural Bangladesh) and 26·6% (225/846; Bougainville, Papua New Guinea), multiple perpetrator rape between 1·4% (18/1246; urban Bangladesh) and 14·1% (119/846; Bougainville, Papua New Guinea), and male rape between 1·5% (13/880; Jayapura, Indonesia) and 7·7% (65/850; Bougainville, Papua New Guinea). 57·5% (587/1022) of men who raped a non-partner committed their first rape as teenagers. Frequent reasons for rape were sexual entitlement (666/909; 73·3%, 95% CI 70·3–76·0), seeking of entertainment (541/921; 58·7%, 55·0–62·4), and as a punishment (343/905; 37·9%, 34·5–41·4). Alcohol was a factor in 249 of 921 cases (27·0%, 95% CI 24·2–30·1). Associated factors included poverty, personal history of victimisation (especially in childhood), low empathy, alcohol misuse, masculinities emphasising heterosexual performance, dominance over women, and participation in gangs and related activities. Only 443 of 1933 men (22·9%, 95% CI 20·7–25·3) who had committed rape had ever been sent to prison for any period.

**Interpretation** Rape perpetration committed by men is quite frequent in the general population in the countries studied, as it is in other countries where similar research has been undertaken, such as South Africa. Prevention of rape is essential, and interventions must focus on childhood and adolescence, and address culturally rooted male gender socialisation and power relations, abuse in childhood, and poverty.

**Funding** Partners for Prevention—a UN Development Programme, UN Population Fund, UN Women, and UN Volunteers regional joint programme for gender-based violence prevention in Asia and the Pacific; UN Population Fund Bangladesh and China; UN Women Cambodia and Indonesia; United Nations Development Programme in Papua New Guinea and Pacific Centre; and the Governments of Australia, the UK, Norway, and Sweden.

## Introduction

Rape, which is defined as physically forced or otherwise coerced penetration of the vulva or anus,<sup>1</sup> violates victims' human rights and causes enduring health problems.<sup>1</sup> Victims are often wives or girlfriends, but can also be men, and in some settings rape of a non-partner woman is especially common.<sup>2</sup> Population-based studies indicate that up to 37% of men in South Africa have ever raped a woman,<sup>2–7</sup> but the global evidence base for rape perpetration is very small.

The only large population-based study of rape that has been published in peer-reviewed literature was undertaken in South Africa. Elsewhere, most research is done with incarcerated offenders and college students. Notwithstanding these limitations, research from North America

and South Africa, summarised in a recent systematic review,<sup>8</sup> suggests that key risk factors for rape perpetration include adverse childhood experiences (abuse), attachment and personality disorders, social learning and delinquency (including gang membership), prevalent sex-inequitable ideals of masculinity that emphasise the importance of heterosexual performance (eg, many sexual partners, including transactional sex, and to prove male sexual prowess) and control of women (including with physical violence), and substance misuse.<sup>2,6,8–11</sup> The role of other factors has also been discussed, including absence of empathy,<sup>6</sup> and some evidence exists for genetic effects.<sup>12</sup>

To generate data for rape and intimate partner violence perpetration to use in intervention strategies, the UN Multi-country Cross-sectional Study on Men and Violence

*Lancet Glob Health* 2013;  
1: e208–18

Published Online  
September 10, 2012  
[http://dx.doi.org/10.1016/S2214-109X\(13\)70069-X](http://dx.doi.org/10.1016/S2214-109X(13)70069-X)  
See [Comment](#) page e170

See [Articles](#) page e187

Copyright © Jewkes et al. Open Access article distributed under the terms of CC BY-NC-ND

\*Members of the research team are listed at the end of the paper

Gender and Health Research Unit, Medical Research Council, Pretoria, South Africa (Prof R Jewkes MBBS MD); School of Public Health, University of the Witwatersrand, Pretoria, South Africa (R Jewkes); Partners for Prevention: a UNDP, UNFPA, UN Women and UNV regional joint programme for gender-based violence prevention in Asia and the Pacific, Bangkok, Thailand (E Fulu PhD, T Roselli BSc); and Department of Reproductive Health and Research, World Health Organization, Geneva, Switzerland (C Garcia-Moreno MD)

Correspondence to:  
Prof Rachel Jewkes, Gender and Health Research Unit, Medical Research Council, Private Bag X385, Pretoria 0001, South Africa  
[rjewkes@mrc.ac.za](mailto:rjewkes@mrc.ac.za)

was undertaken in nine diverse sites across six countries in Asia and the Pacific: Bangladesh, China, Cambodia, Indonesia, Papua New Guinea, and Sri Lanka. The study showed that 26–80% of men disclosed perpetration of physical or sexual intimate partner violence, which varied by country and by site.<sup>13</sup> In this Article, we present the prevalence and patterns of men's perpetration of rape against non-partner women and against men, the reasons given for the rape, the consequences experienced, and the factors associated with perpetration. The questionnaire used in the study drew heavily on South African research into rape perpetration,<sup>2</sup> and studied potential factors associated with rape that have been identified in previous research.<sup>2,6,9,11</sup>

## Methods

### Study sites and participants

The study was developed by Partners for Prevention, a regional joint programme of the UN Development Programme, the UN Population Fund, UN Women, and UN Volunteers for the prevention of gender-based violence in Asia and the Pacific, in collaboration with the Medical Research Council of South Africa and the individual country research teams. Research was undertaken in January 2011–December 2012. The study sites varied between countries, to represent some of the regional diversity. In Cambodia, the sample was representative of the whole country, whereas in Papua New Guinea it was taken from the island of Bougainville. In Bangladesh and Indonesia, samples were taken from the capital city of each country and from one provincial site (in Bangladesh) or two provincial sites (in Indonesia). The Chinese site was a county with an urban and rural area, whereas in Sri Lanka, we surveyed Colombo and three contrasting districts and pooled the data to treat Sri Lanka as one site.

We used a multistage sampling strategy in each setting. We selected census enumeration areas, with a probability

proportionate to size, and systematically chose households within these areas. In each household, a man aged 18–49 years (randomly selected when necessary) was invited for interview with a trained male interviewer. We excluded men aged 50 years and older to reduce recall bias and to avoid the heightened sensitivity about discussion of sexual matters. We did most interviews face-to-face, but answers to the most sensitive questions were self-completed on audio-enhanced personal digital assistants. In China, a household list of individuals in each cluster by age and sex was available and therefore we used this list for sampling within selected clusters and the entire questionnaire was self-completed. Full details of the methods, sampling, and response rates are available elsewhere.<sup>13</sup>

We interviewed a total of 10 178 men—between 815 and 1812 per site. The proportion of enumerated and eligible men actually interviewed at each site was generally between 97·3% (Cambodia) and 82·5% (China), and was lower only in urban Bangladesh (73·2%) and Sri Lanka (58·7%).<sup>13</sup> A comparison of population age and education distributions from available censuses showed that in rural Bangladesh our sample was a little older than the general population there and in Sri Lanka, younger. For other sites, our sample from each site was very similar in age structure to the overall population. In all settings, our sample was more educated than the general population, except in Papua New Guinea where no data for education were available. A comparison table is available elsewhere, with limitations in the comparison noted.<sup>13</sup> Across the region, 6·7% (842/12 576) of men or their household heads refused to participate in an interview, 2·5% (314/12 476) gave a partial interview, and 9·8% (1227/12 476) were unavailable—mostly because of extended absence, not having a shared language for the interview, or incapacity (either illness or mental incapacity).

	Rape of non-partner women			Rape of a man
	Never	Single perpetrator rape	Multiple perpetrator rape	
Bangladesh				
Rural	1081/1131 (95·6%, 93·9–96·8)	28/1131 (2·5%, 1·6–3·8)	22/1131 (1·9%, 1·2–3·1)	43/1130 (3·8%, 2·7–5·1)
Urban	1195/1246 (95·9%, 94·2–97·1)	33/1246 (2·7%, 1·8–3·9)	18/1246 (1·4%, 0·8–2·5)	22/1244 (1·8%, 1·0–3·0)
Cambodia	1629/1776 (91·7%, 90·0–93·1)	55/1776 (3·1%, 2·3–4·1)	92/1776 (5·2%, 4·1–6·5)	58/1774 (3·3%, 2·4–4·4)
China	901/980 (91·9%, 89·4–93·9)	57/980 (5·8%, 4·3–7·8)	22/980 (2·2%, 1·4–3·7)	16/969 (1·7%, 0·9–2·9)
Indonesia				
Jakarta	781/854 (91·5%, 89·8–92·9)	56/854 (6·6%, 5·4–7·9)	17/854 (2·0%, 1·2–3·3)	13/855 (1·5%, 0·9–2·5)
Rural Java	753/799 (94·2%, 92·0–95·9)	34/799 (4·3%, 2·5–7·1)	12/799 (1·5%, 0·8–2·7)	14/800 (1·8%, 1·0–3·1)
Jayapura	673/879 (76·6%, 71·9–80·7)	146/879 (16·6%, 13·4–20·5)	60/879 (6·8%, 5·8–8·1)	13/880 (1·5%, 0·7–3·2)
Papua New Guinea				
Bougainville	502/846 (59·3%, 54·6–63·9)	225/846 (26·6%, 23·3–30·2)	119/846 (14·1%, 11·2–17·6)	65/850 (7·7%, 5·6–10·3)
Sri Lanka	1351/1440 (93·8%, 91·7–95·4)	66/1440 (4·6%, 3·4–6·2)	23/1440 (1·6%, 1·0–2·5)	38/1432 (2·7%, 1·9–3·8)

Data are n/N (% , 95% CI).

**Table 1: Prevalence of perpetration of rape of women who were not partners and of men by country and site**

The word rape was not used in the questionnaire; instead, it was operationalised through responses to questions about specific acts. Two questions about non-partner rape asked about having “forced a woman who was not your wife or girlfriend at the time to have sex” or having “had sex with a woman who was too drunk or drugged to indicate whether she wanted it”, and how often the male interviewees had committed such acts. Two additional questions asked about having done these acts with other men (multiple perpetrator rape).

These questions followed those on sexual violence against a partner, which asked about “forced sex” or sex “forced when he knew she didn’t want it but believed she should agree because she was his wife or partner” (both acts of rape). In this report, men who had raped but never with other men were classed as having committed “single perpetrator rape” and all others as having done “multiple perpetrator rape”. The latter category therefore includes some men who had also committed single perpetrator rape. Men were asked

	All countries (n/N)	All countries	Bangladesh	Cambodia	China	Indonesia	Papua New Guinea	Sri Lanka
Any non-partner rape	1085/9951	10.9% (10.1–11.8)	4.3% (3.3–5.4)	8.3% (6.9–10.0)	8.1% (6.1–10.6)	12.8% (10.9–15.1)	40.7% (36.1–45.4)	6.2% (4.6–8.3)
Partner rape ever among ever-partnered men	1983/8178	24.2% (23.0–25.5)	12.9% (11.1–14.9)	20.8% (18.6–23.1)	19.4% (17.4–21.7)	29.1% (26.4–31.9)	59.1% (53.8–64.2)	15.5% (12.8–18.7)
Partner or non-partner rape among all men	2389/9961	24.0% (22.8–5.2)	11.1% (9.4–12.7)	20.8% (18.6–22.9)	22.7% (20.2–25.1)	31.9% (29.1–34.8)	60.7% (54.8–66.6)	14.6% (12.0–17.3)
Past year non-partner rape perpetration among men who have raped a partner or non-partner	319/2000	16.0% (14.3–17.8)	NA	16.0% (11.4–22.1)	15.5% (11.8–19.9)	14.7% (11.8–18.0)	23.4% (19.1–28.4)	8.1% (4.3–14.9)
Number of women raped*								
1	567/1023	55.4% (52.3–58.5)	56.3% (75.6–66.4)	72.2% (64.4–78.9)	63.4% (47.4–76.6)	48.0% (43.8–52.2)	56.3% (50.6–61.7)	45.8% (32.2–60.1)
2–3	290/1023	28.3% (25.8–31.1)	36.5% (26.3–47.9)	12.7% (7.7–20.2)	21.1% (13.4–31.6)	35.7% (32.5–39.0)	25.0% (19.9–30.9)	36.1% (24.9–49.0)
4–10	123/1023	12.0% (9.9–14.5)	7.3% (3.3–15.3)	11.9% (7.2–19.1)	10.5% (5.3–19.8)	12.9% (9.1–18.0)	11.9% (8.3–16.8)	16.7% (9.1–28.5)
≥10	43/1023	4.2% (3.2–5.5)	0	3.2% (1.2–8.3)	5.3% (2.3–11.8)	3.5% (2.0–6.0)	6.9% (4.6–10.1)	1.4% (0.2–10.0)
Age when first committed rape (years)								
<15	151/1022	14.8% (12.5–17.4)	18.1% (11.3–27.7)	19.2% (13.1–27.2)	0	7.6% (5.0–11.4)	24.6% (19.3–30.7)	2.8% (0.7–11.0)
15–19	436/1022	42.7% (39.3–46.1)	43.6% (34.4–53.3)	32.2% (25.4–40.1)	31.1% (21.4–42.8)	51.9% (44.9–58.8)	41.7% (36.0–47.7)	36.1% (25.8–47.9)
20–29	360/1022	35.2% (31.9–38.7)	31.9% (22.2–43.5)	29.2% (21.6–38.2)	60.8% (48.8–71.7)	37.3% (30.8–44.2)	27.5% (22.1–33.6)	51.4% (39.8–62.8)
30–39	45/1022	4.4% (3.2–6.0)	5.3% (2.2–12.3)	6.2% (3.2–11.6)	2.7% (0.6–11.7)	2.9% (1.3–6.3)	4.4% (2.6–7.6)	8.3% (4.0–16.7)
≥40	30/1022	2.9% (2.1–4.1)	1.1% (0.1–7.7)	13.2% (8.8–19.0)	5.4% (1.7–15.8)	0.3% (0.0–2.4)	1.8% (0.0–3.7)	1.4% (0.0–9.9)
Prevalence of intimate partner rape by non-partner rape perpetration exposure category								
Raped a partner but never raped a non-partner	1294/7126	18.2% (17.2–19.2%)	10.8% (9.2–12.7)	16.9% (14.8–19.2)	16.6% (14.6–18.8)	23.2% (21.3–25.3)	41.6% (35.0–48.4)	12.1% (9.7–15.1)
Raped a partner and raped a woman as a single perpetrator	453/649	69.8% (66.1–73.2)	47.5% (32.2–63.3)	63.6% (49.9–75.5)	52.6% (37.8–67.0)	68.8% (63.3–73.8)	83.2% (77.2–87.9)	61.9% (47.1–74.8)
Raped a partner and raped a woman among multiple perpetrators	226/339	66.7% (61.4–71.7)	75.0% (54.5–88.3)	61.3% (50.6–71.0)	50.0% (24.5–75.5)	64.3% (52.8–74.3)	78.1% (70.9–83.9)	45.5% (24.4–67.8)
Prevalence of male rape by woman rape perpetration exposure								
Raped a man but never raped a woman	121/8820	1.4% (1.1–1.7)	1.8% (1.3–2.6)	0.7% (0.4–1.3)	0.9% (0.4–1.9)	1.0% (0.6–1.6)	2.6% (1.5–4.3)	1.9% (1.2–2.9)
Raped a man and raped a woman as a single perpetrator	43/696	6.2% (4.6–8.3)	13.1% (6.8–23.8)	10.9% (4.1–25.8)	1.9% (0.2–14.2)	3.4% (1.6–7.2)	5.8% (3.4–9.6)	10.8% (5.1–21.4)
Raped a man and raped a woman among multiple perpetrators	116/384	30.2% (30.2–30.2)	35.0% (21.4–51.6)	43.5% (32.8–54.8)	31.8% (15.0–55.3)	12.4% (7.2–20.4)	31.9% (22.2–43.6)	27.3% (27.3–27.3)

(Continues on next page)

	All countries (n/N)	All countries	Bangladesh	Cambodia	China	Indonesia	Papua New Guinea	Sri Lanka
(Continued from previous page)								
Reasons for the last rape of a non-partner woman†								
Sexual entitlement	666/909	73.3% (70.3–76.0)	82.3% (72.2–89.2)	40.8% (31.0–51.4)	90.9% (83.2–95.3)	76.5% (72.3–80.2)	73.2% (67.3–78.4)	78.1% (58.9–89.8)
Entertainment seeking	541/921	58.7% (55.0–62.4)	67.1% (55.8–76.7)	41.6% (31.2–52.8)	63.2% (49.8–74.9)	55.2% (47.6–62.7)	74.1% (69.3–78.3)	23.0% (14.4–34.7)
Anger and punishment	343/905	37.9% (34.5–41.4)	29.1% (19.4–41.2)	39.8% (29.1–51.6)	51.5% (40.6–62.3)	29.7% (25.1–34.6)	50.5% (43.2–57.9)	15.5% (9.1–25.2)
Rape after drinking	249/921	27.0% (24.2–30.1)	11.4% (6.2–20.1)	22.8% (15.8–31.7)	30.9% (20.6–43.6)	35.3% (29.8–41.2)	25.9% (20.6–32.1)	16.2% (8.1–29.8)
Consequences ever experienced after any act of rape perpetration								
Felt guilty	1070/1940	55.2% (52.6–57.7)	33.9% (28.1–40.3)	49.8% (42.7–56.9)	49.5% (43.4–55.7)	75.5% (71.4–79.3)	56.9% (52.8–61.0)	33.0% (26.2–40.5)
Punished by friends or family	692/1936	35.7% (33.4–38.2)	7.7% (5.0–11.5)	37.9% (32.4–43.7)	35.1% (29.4–41.3)	33.8% (30.2–37.7)	64.4% (58.9–69.6)	6.6% (3.5–12.1)
Arrested	627/1931	32.5% (29.9–35.1)	8.4% (5.6–12.4)	49.8% (43.7–55.9)	24.9% (19.5–31.2)	20.7% (18.2–23.5)	66.1% (60.2–71.5)	3.2% (1.4–7.3)
Sent to prison	443/1933	22.9% (20.7–25.3)	5.5% (3.5–8.5)	28.3% (23.1–34.2)	15.6% (12.0–20.0)	13.8% (12.2–15.6)	52.2% (46.1–58.3)	2.1% (0.3–4.0)
Data are % (95% CI), unless otherwise indicated. *Among men who raped non-partners. †Reasons provided by men who had never raped a man or a female partner.								
<b>Table 2: Patterns of perpetration of rape of women and overlaps with rape of men in all countries</b>								

whether they had raped in the past 12 months, how many different women they had ever raped, and their age the first time. We did not collect data for the relationship between non-partner rape victims and the male interviewee, but the questions precluded them from being former partners. Two items asked about male rape perpetration (oral or anal penetration of male victims that was forced or without consent) and multiple perpetrator male rape.

All men who had raped were asked if they agreed or disagreed (on a four-point Likert scale) with a set of statements about why they did it. The statements expressed sexual entitlement (or the belief that if a man wants sex he has a right to have it, irrespective of the woman's views: "I wanted her", "I wanted to have sex", or "I wanted to show I could do it"); entertainment seeking ("I wanted to have fun" or "I was bored"); anger or punishment ("I wanted to punish her" or "I was angry with her"); and drinking ("I had been drinking"). The statements were validated in each country but had originally been developed in South Africa.<sup>2</sup> For one act of rape, men could endorse more than one of these statements.

The five questions about physical intimate partner violence perpetration were South African adaptations for men from the WHO Multi-country Study measure.<sup>2,14</sup> The other explanatory variables are defined in appendix p 1.

We followed ethics and safety guidelines for research with men on rape perpetration.<sup>15</sup> To protect men who were providing sensitive disclosure, we presented the study as a family and health study. The interviewees received an information sheet and provided signed

consent. To ensure confidentiality, we kept no household lists with identifying details of respondents. Ethics approval was provided by the Medical Research Council of South Africa; the College of Humanities, Beijing Forestry University; the International Centre for Diarrhoeal Disease Research, Bangladesh; the National Ethics Committee for Health Research of Cambodia; the Faculty of Medicine at the University of Colombo, Sri Lanka; and the Faculty of Medicine, Gadjah Mada University, Indonesia.

### Statistical analysis

The study design provided a self-weighted sample for each site. We used Stata/IC 12.0 for all procedures, and took into account the structure of the dataset, with stratification by site within a country and the enumeration areas as clusters. We summarised variables as percentages (or means), with 95% CIs calculated with standard methods for estimating CIs from complex multistage sample surveys (Taylor linearisation). We used Pearson's  $\chi^2$  test to analyse associations between categorical variables.

131 of 10178 (1.3%) participants had missing data for the gender-equitable men scale and 611 of 8000 (7.6%) participants who had ever had sex had data missing for number of partners. In cases for which the gender-equitable men scale had only one missing item, an average taken from the rest of the scale was used to replace the missing value. If more than one value was missing, no replacement was made. For partner numbers, we first established that the data were missing at random and then imputed data with Stata's

See Online for appendix

	Never raped	Single perpetrator rape	Multiple perpetrator rape	p value*
<b>Social characteristics</b>				
Age (years)				0.36
18–24	2369/8865 (26.7%)	172/700 (24.6%)	104/385 (27.0%)	..
25–34	2937/8865 (33.1%)	254/700 (36.3%)	137/385 (35.6%)	..
35–49	3559/8865 (40.2%)	274/700 (39.1%)	144/385 (37.4%)	..
No high school	6204/8864 (70.0%)	499/699 (71.4%)	194/385 (50.4%)	<0.0001
Ever married or cohabited	6094/8866 (68.7%)	542/700 (77.4%)	288/385 (74.8%)	<0.0001
Present food insecurity	2434/8793 (27.7%)	250/690 (36.2%)	201/379 (53.0%)	<0.0001
<b>Victimisation history</b>				
Childhood sexual abuse	1414/8862 (16.0%)	219/699 (31.3%)	141/385 (36.6%)	<0.0001
Childhood physical abuse	2782/8862 (31.4%)	410/699 (58.7%)	233/385 (60.5%)	<0.0001
Childhood emotional abuse or neglect	2660/8862 (30.0%)	363/699 (51.9%)	230/385 (59.7%)	<0.0001
Father rarely or never at home	3074/8833 (34.8%)	241/700 (34.4%)	165/383 (43.1%)	0.004
Was raped or coerced by a man	288/8795 (3.3%)	69/694 (9.9%)	70/380 (18.4%)	<0.0001
Any homophobic abuse or violence	251/8794 (2.9%)	40/690 (5.8%)	72/379 (19.0%)	<0.0001
<b>Psychological factors and substance misuse</b>				
Mean empathy score	0.031 (0.017)	−0.174 (0.038)	−0.266 (0.059)	<0.0001
Mean life satisfaction score	−0.009 (0.013)	0.132 (0.048)	−0.028 (0.058)	0.001
Alcohol problems	699/8708 (8.0%)	243/688 (35.3%)	137/380 (36.1%)	<0.0001
<b>Attitudes</b>				
Gender equity score: low	1254/8807 (14.2%)	134/695 (19.3%)	84/384 (21.9%)	<0.0001
Blaming of rape victim	485/8851 (5.5%)	57/699 (8.2%)	51/385 (13.2%)	<0.0001
<b>Relationship with partner and other women</b>				
Any physical intimate partner violence perpetration	2079/8738 (23.8%)	351/690 (50.9%)	198/374 (52.9%)	<0.0001
Number of sexual partners				<0.0001
0 or 1	5988/8748 (68.5%)	163/700 (23.3%)	108/380 (28.4%)	..
2–3	1724/8748 (19.7%)	268/700 (38.3%)	125/380 (32.9%)	..
≥4	1036/8748 (11.8%)	269/700 (38.4%)	147/380 (38.7%)	..
Ever had sex with a sex worker or engaged in transactional sex	2625/8536 (30.8%)	429/670 (64.0%)	285/367 (77.7%)	<0.0001
<b>Engagement in violence outside the home and drug use</b>				
Involved in fights with weapons	816/8831 (9.2%)	245/695 (35.3%)	140/382 (36.7%)	<0.0001
Involvement in gangs	541/8831 (6.1%)	185/696 (26.6%)	156/382 (40.8%)	<0.0001
Drug use in the past year	694/8818 (7.9%)	132/694 (19.0%)	114/380 (30.0%)	<0.0001

Data are n (%) or mean (SD), unless otherwise indicated. \*The p values in this table were calculated with Pearson's  $\chi^2$  test to assess whether the row and column variables are independent of each other.

**Table 3: Prevalence of possible associated factors by non-partner rape category in all countries**

multiple imputation methodology. We did no other replacements.

We present the population prevalence rates by site, except when the sample was nationally representative. When presenting patterns and risk factors, we pool the sites within a country, and for the regional analysis we have pooled data from all the countries. We fitted maximum likelihood multinomial logit models for complex survey data to compare factors associated with single and multiple perpetrator rape, in which never having committed rape was the base condition. Multinomial logistic regression aims to construct a model that explains the relation between the explanatory variables and the (three) categorical, but not ordered, violence outcomes. In the process, it explains the relative effect of

independent variables on the outcomes with relative risk ratios (RRRs). These ratios are similar to odds ratios but rather than using a base case, they use one outcome (ie, “never raped” in this case) against which the two others are compared separately. We fitted the models for each country separately, and combined, and entered the associated factors studied and a term for site into the model. We used backwards elimination, and the final model variables were retained at  $p < 0.05$ . Information about risk factors for partner rape is presented elsewhere.<sup>13</sup>

To account for clustering of men within enumeration areas, we used random effects logistic regression models to model rape of men. We fitted the models with the same procedure described for the multinomial models and the same candidate variables were tested. The model



was not built for the site in China because of low power (only 16 men at that site disclosed male rape). Low power overall prevented an analysis of single and multiple perpetrator rape of men.

Based on the work of Greenland,<sup>16</sup> we calculated the population-attributable fractions (PAFs) for rape perpetration with the RRR from the adjusted models and the formula  $PAF = ((RRR - 1) / RRR) \times P_e$ , where  $P_e$  was the proportion of the cases that had exposure to the factor. We calculated CIs with the same formula but with the upper and lower confidence limits of the RRR. We calculated the overall PAF for lifetime partners by combining the higher categories (two or more lifetime sexual partners vs none or one).<sup>17</sup> PAFs estimate the importance of associated factors by combining the strength of association (in this case RRR) and the prevalence of the variable.

#### Role of the funding source

The sponsors of the study had no role in study design, data collection, data analysis, data interpretation, or writing of the report. RJ, EF, and TR had access to all the data in the study, and all authors had final responsibility for the decision to submit for publication.

## Results

The prevalence of female non-partner rape perpetration varied between 4% (in urban Bangladesh) and 41% (in Papua New Guinea), but in most sites was between 6% and 8% (table 1). The prevalence of multiple perpetrator rape perpetration was mostly between 1% and 2%, but was substantially higher in Cambodia (5%), Jayapura in Indonesia (7%), and Papua New Guinea (14%; table 1). Only in Cambodia was multiple perpetrator rape perpetration more common than single perpetrator rape perpetration (table 1). Rape of a man (prevalence of 3% [281/9934] across the whole Asia and Pacific region) was less common than rape of a non-partner woman, and had the highest prevalence in Sri Lanka, Cambodia, and rural Bangladesh (3–4% in all sites), and Papua New Guinea (8%; table 1). In the past year, 246 of 9981 (2.5%, 95% CI 2.1–2.9) men questioned had raped a non-partner woman. However, 12% (99/849) had done so in Papua New Guinea.

Rape of an intimate partner was more common than was non-partner rape in all countries (table 2). The combined sample prevalence of intimate partner rape in men who had ever had a partner was 24%, ranging from 13% in Bangladesh to 59% in Papua New Guinea. Overall, two-thirds of men who had raped a non-partner had also raped a partner as a single or multiple perpetrator (table 2).

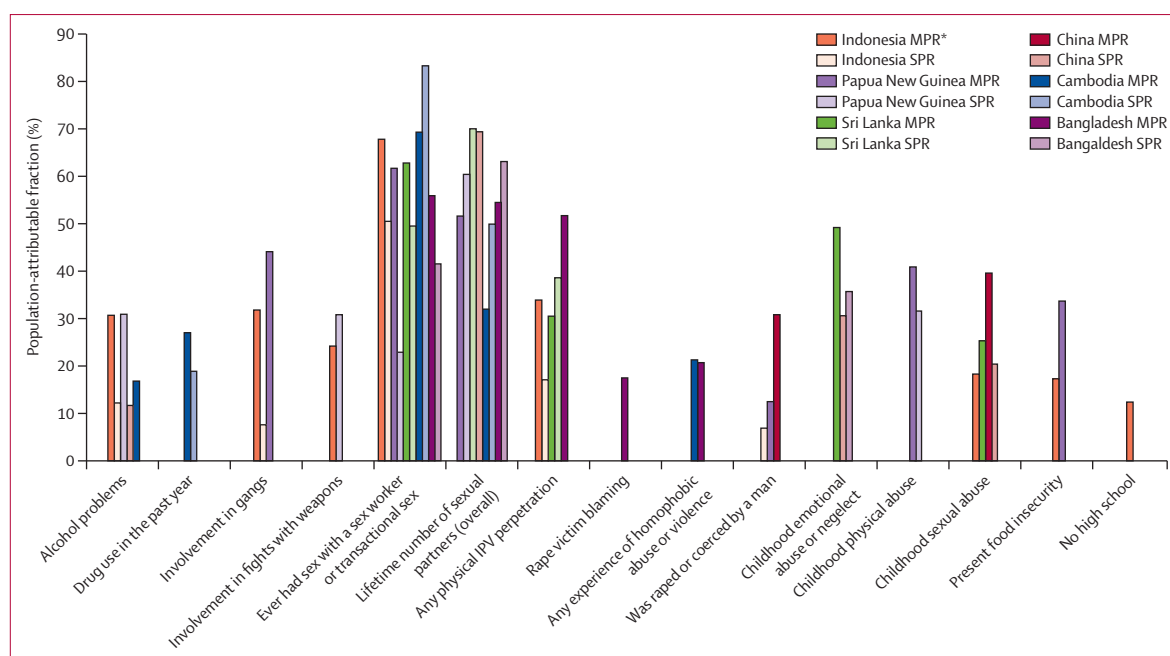
Table 2 shows that more than half of men who have ever raped a non-partner had only ever raped one woman, but 16% had perpetrated against four or more women (ranging from 7% in Bangladesh to 19% in Papua New Guinea). More than half of the men who had raped a non-partner did so for the first time as a teenager (table 2). Most men who had raped a man had also raped a non-partner woman (table 2). The prevalence of male rape ranged from 1% in men who had never raped a woman to 30% in those who had been involved in multiple perpetrator rape of a woman (table 2). 87.9% (247/281) of men who had raped a man had had sex with a woman (179/281 [63%] were currently married). Only 11% (24/211) reported being only sexually attracted to men.

All men who had raped were asked about the reasons for the most recent rape. Of those who had raped a non-partner woman (but not a man or a partner), the most common reason for the most recent rape expressed sexual entitlement (statements endorsed by 73% of men across the region; table 2), followed by entertainment seeking (59%), anger or punishment (38%), and alcohol or substance use (27%; table 2). When asked about what consequences they had ever experienced after rape, only 55% of men had felt guilty, and 23% had been sent to prison for rape of a partner or non-partner woman, or man (table 2), but this proportion varied from 2% (Sri Lanka) to 52% (Papua New Guinea), where traditional rape punishments are used, with short-term detention by the police in prison until traditional preparations have been made.

	Single perpetrator rape		Multiple perpetrator rape	
	Relative risk ratio (95% CI)	p value	Relative risk ratio (95% CI)	p value
<b>Social characteristics</b>				
No high school	NS	NS	1.42 (1.06–1.92)	0.021
Present food insecurity	NS	NS	1.42 (1.09–1.85)	0.009
Ever married or cohabited	1.49 (1.08–2.07)	0.017	NS	NS
<b>Victimisation history</b>				
Childhood sexual abuse	1.66 (1.31–2.09)	<0.0001	1.74 (1.32–2.28)	<0.0001
Childhood physical abuse	1.30 (1.05–1.62)	0.018	NS	NS
Childhood emotional abuse or neglect	1.80 (1.26–2.55)	0.001	2.27 (1.46–3.55)	<0.0001
Any homophobic abuse or violence	NS	NS	2.85 (1.71–4.73)	<0.0001
<b>Psychological factors and substance misuse</b>				
Alcohol problems	1.70 (1.38–2.08)	<0.0001	1.46 (1.08–1.98)	0.015
Empathy scale	0.85 (0.78–0.92)	<0.0001	0.81 (0.72–0.92)	0.001
<b>Sexual and relationship practices</b>				
Any physical IPV perpetration	1.71 (1.35–2.17)	<0.0001	2.01 (1.50–2.70)	<0.0001
Number of sexual partners				
0 or 1	1.00	..	1.00	..
2–3	4.05 (3.11–5.28)	<0.0001	2.13 (1.53–2.96)	<0.0001
≥4	6.05 (4.50–8.15)	<0.0001	4.11 (2.92–5.78)	<0.0001
Ever had sex with a sex worker or engaged in transactional sex	2.58 (2.07–3.21)	<0.0001	4.67 (3.37–6.47)	<0.0001
<b>Participation in violence outside the home and drug use</b>				
Involved in fights with weapons	1.76 (1.38–2.24)	<0.0001	1.69 (1.24–2.32)	0.001
Involvement in gangs	NS	NS	2.38 (1.68–3.38)	<0.0001
Drug use in the past year	NS	NS	1.78 (1.20–2.64)	0.005

Only significant associations are shown. NS=non-significant. IPV=intimate partner violence.

**Table 4: Multinomial regression model of factors associated with single and multiple perpetrator rape against non-partner women (n=9209) in all countries adjusted for age and site**



**Figure:** Relative importance of different factors associated with non-partner rape perpetration in the countries studied, measured by the population-attributable fractions

SPR=single perpetrator rape. MPR=multiple perpetrator rape.

Table 3 shows the prevalence of possible factors associated with non-partner rape (see appendix p 2 for breakdown by country). Table 4 shows a multinomial model of factors associated with single and multiple perpetrator rape across the dataset, and that for each country is presented in appendix p 3. Men who had ever been married or cohabited were more likely to have engaged in single perpetrator non-partner rape than were those who had not been married, and men who were poor (indicated by present food insecurity), or had no high school education (compared with any high school or higher education) were more likely to have raped with multiple perpetrators. Men with a history of victimisation, especially child sexual abuse and having been raped or otherwise sexually coerced themselves, were more likely than were those without such a past to have perpetrated either type of rape. Exposure to childhood physical abuse was associated with a greater likelihood of single perpetrator rape, and a history of experience of homophobic violence with multiple perpetrator rape. Emotional abuse and neglect were associated with both types of rape, as were heavy alcohol consumption and low levels of empathy. To have been physically violent toward a partner, to have ever had sex with a sex worker or engaged in transactional sex, and to have had more lifetime sexual partners were associated with both types of rape—the latter association strengthened with increasing numbers of lifetime partners. Involvement in fights with weapons was associated with both types of rape, and multiple perpetrator rape was associated with gang memberships and drug use within the past year.

The PAFs were greatest for the variables related to sexuality and sex relations (figure). Participation in violence outside the home and illegal behaviours (eg, drug use) were significant risk factors for multiple perpetrator rape. A history of physical or sexual abuse in childhood was the most important victimisation history factor for single perpetrator rape. For multiple perpetrator rape, a past experience of homophobic violence was equally as important as child sexual abuse.

Table 5 presents the factors associated with rape of a man (see appendix p 4 for models by country). Male rape was associated with poverty (defined as present food insecurity), being a victim of rape or homophobic violence or taunts, having more lifetime female sexual partners, sex with a sex worker or transactional sex, having been a gang member, and drug use in the past year.

## Discussion

We have presented information about perpetration of rape of non-partner women and of men from a large representative sample of men from the general population in a multicountry study. The prevalence and patterns of perpetration varied substantially between countries and sites. Rape of women in marriage was much more prevalent than was non-partner rape. In most countries and sites, between one in five and one in eight men had ever raped a woman, although in Papua New Guinea this proportion was much higher. Comparable research from South Africa showed that more than one in four men (28%) had ever committed rape.<sup>2</sup> Overlaps between rape of men and of women

	Odds ratio (95% CI)	p value
<b>Social characteristics</b>		
Ongoing food insecurity	1.63 (1.21–2.21)	0.001
<b>Victimisation history</b>		
Was raped or coerced by a man	3.50 (2.43–5.04)	<0.0001
Any homophobic abuse or violence	5.45 (3.76–7.88)	<0.0001
<b>Sexual practices</b>		
Number of sexual partners		
1 or 0	1.00	..
2–3	1.95 (1.37–2.77)	<0.0001
≥4	1.76 (1.19–2.61)	0.005
Ever had sex with a sex worker or engaged in transactional sex	2.82 (2.01–3.96)	<0.0001
<b>Participation in violence outside the home and drug use</b>		
Involvement in gangs	1.58 (1.10–2.27)	0.014
Drug use in the past year	2.46 (1.74–3.50)	<0.0001

Only significant associations are shown.

**Table 5: Random effects logistic regression models of factors associated with perpetration of rape of a man in all countries, adjusted for age and site**

non-partners were pronounced. Overall, more than half (57.5%) of men who had ever raped did so for the first time as teenagers, with this rate varying between 33% and 66% by site. This proportion is lower than those reported in South Africa and the USA (75%),<sup>2,18</sup> but still reinforces the need for early rape prevention if one is to intervene before the first rape is committed. Overall, nearly a quarter of men who had raped had been punished with being sent to prison for having done so, although the duration of their imprisonment is unknown. These data suggest surprisingly high conviction rates compared with those in other countries<sup>19,20</sup> (eg, in South Africa, only 3.2% of adult rape cases reported to the police and 4% of child rapes result in a conviction,<sup>20</sup> and in comparable research with men 12.9% disclosed having ever been imprisoned for rape<sup>2</sup>), but do not suggest that the threat of prison or detention is a strong deterrent against rape perpetration. In view of the high prevalence of rape, prevention strategies need to focus on the structural and social risk factors, and prevention of perpetration of rape from ever occurring, rather than relying on prevention through responses.

The high prevalence of rape in Bougainville (Papua New Guinea) and Jayapura (Indonesia) could be related to previous conflict in these settings, but this link is unclear. In Papua New Guinea, many forms of violence are highly prevalent, including non-partner rape in non-conflict-affected areas, general interpersonal violence, and sorcery-related violence.<sup>21–23</sup> The cultural legitimacy of multiple perpetrator rape (known in pidgin as “lainup”) in mainland research has been described by other investigators.<sup>21</sup> Indeed, reports of multiple perpetrator rape as a cultural or subcultural practice has also been reported in Cambodia (“bauk”)<sup>24</sup> and South Africa (“streamlining”),<sup>25</sup> and high rape prevalence is probably

rooted in aspects of culture related to sexual entitlement and sex relations. This idea is made more likely by the acknowledged reasons for rape, which showed that men mostly raped because they wanted to and felt entitled to, found it entertaining, and at times viewed it as “deserved” punishment of women. The responses were very similar to those from South Africa where these questions have also been asked.<sup>2</sup>

The factors associated with rape and the PAFs also suggest that gendered practices associated with sexual dominance are especially important. Rape of men and of women was strongly associated with partner numbers, transactional sex, and use of physical violence against female partners, as was rape of intimate partners.<sup>13</sup> Men with these factors had higher rates of rape in South African longitudinal research,<sup>26</sup> where these behaviours are interpreted as not merely expressing sex seeking, but rather as concepts of masculinity that emphasise proven heterosexual performance and dominance over women.<sup>2,11,27</sup>

These masculine ideals often also draw attention to performances of strength and toughness, which are expressed in fights between men with weapons.<sup>28,29</sup> On a cautionary note, PAFs have an underlying assumption of causality, but because this study was cross-sectional, we cannot ascertain whether or not the associations are causal.

Poverty, indicated by present food insecurity and low educational attainment, was especially associated with multiple perpetrator rape and rape of men, and with physical and sexual partner violence.<sup>13</sup> Although we reported poverty to be not associated with single perpetrator rape, its importance has not been consistently reported in resource-poor settings.<sup>2,26,30,31</sup> In situations of poverty, however, sub-cultures of gang membership and drug use can develop, which provides a context in which dominance over women and other men might be emphasised to compensate for otherwise perceived disempowerment.<sup>9,11,26,30,32,33</sup> The overlap between rape of men and multiple perpetrator rape of women suggests a shared origin. They can both often be gang acts, in which rape of men might demonstrate (hetero)sexual dominance, rather than necessarily homosexuality.<sup>30</sup> Gay or effeminate men are disproportionately victims of such attacks.<sup>34</sup>

Rape perpetration against women was associated with men's own victimisation, especially abuse in childhood. Sexual abuse in childhood has been previously linked to rape of women,<sup>11,35,36</sup> but our findings show that physical and emotional abuse are also important. Physical abuse in childhood has not been consistently associated with rape perpetration.<sup>8,33,35,36</sup> The link with emotional abuse and neglect in childhood has not been previously shown,<sup>37</sup> but it was a risk factor for rape in three countries, and for rape of intimate partners.<sup>13</sup> To protect boys from abuse is crucial for the long-term prevention of violence against women and girls. Being raped or coerced into sex when older was associated only with rape of men and rape of a non-partner woman in three countries, but not in the regional analysis overall.



Alcohol misuse was associated with single and multiple non-partner rape perpetration in the region overall, and in models of four of the countries (Cambodia, China, Indonesia, and Papua New Guinea), and with intimate partner violence perpetration.<sup>13</sup> Substantial research has been undertaken into the role of alcohol in rape perpetration; the existing consensus is that it is a situational factor that reduces inhibitions, and alcohol misuse is associated with particular dominant masculinities.<sup>38</sup> Another associated factor was low levels of empathy, which leads people to commit acts of harm against others. A notable difference between partner and non-partner rape is that relationship-specific variables—eg, quarrelling and controlling behaviours towards a female partner—were not associated with non-partner rape or with male rape.<sup>13</sup>

The study had some limitations. Most samples were not nationally representative and so are only indicative of the sampled sites. The degree of generalisability beyond this is unclear, but the demographics of the sample were similar to the census data, and any differences would probably result in a lower prevalence of rape perpetration in the study than in the general population because attendance at high school was a protective factor. The combined analysis findings do not represent the whole Asia and Pacific region because we included only some countries, and few sites, and the sample sizes varied between countries. Rape perpetration could have been under-reported. The validity of self-reported perpetration is difficult to establish, but research was done in parallel with women in four of the study sites (in Cambodia, China, Papua New Guinea, and Sri Lanka) and in all countries the confidence intervals for the prevalence reported by women overlapped with those for men, except for in Cambodia where the prevalence reported by men was higher. This finding could be explained by the gang rape of sex workers because such acts generally involve several male perpetrators and one victim. In two countries (Cambodia and China), men reported more perpetration than did women reporting victimisation, whereas in two others (Sri Lanka and Papua New Guinea), men reported less.<sup>39</sup> Since the research was cross-sectional, we report associations rather than risk factors. In Bangladesh, we did not ask questions about sex with women or girls when they were too “drunk or drugged” to consent or stop it because substance use by women is rare in that country. Intimate partner rape in Bangladesh might therefore have been underestimated, although partners had not identified this as a common practice. All the prevalence estimates for violence were compared with estimates weighted for the number of eligible men per household. However, the number of eligible men per household did not differ significantly between sites, so we have used unweighted estimates.<sup>39</sup>

Although this study focused on countries in Asia and the Pacific, the findings are of substantial global interest, partly because most of the world’s population lives in this

### Panel: Research in context

#### Systematic review

We searched PubMed and Google with the search terms “rape”, “sexual violence”, “child sexual abuse”, “sexual assault”, “sexual aggression”, “sexual coercion”, “perpetration”, “offender”, “etiology”, “aetiology”, “risk factors”, “aggression”, “paedophile”, and “pedophile”. We sought papers or reports with empirical research on rape perpetration from 1990 onwards, from any country, published in English, and drew on previous systematic reviews. We also searched the reference lists of the papers. In the peer-reviewed published literature, rape perpetration prevalence estimates from a large population-based sample were available only for South Africa. From our review of the literature, we found that adverse childhood experiences (abuse), attachment and personality disorders, social learning and delinquency (including gang membership), substance misuse, and gender-inequitable ideals of masculinity that emphasise the importance of heterosexual performance and control of women are key risk factors for perpetration of rape or sexual violence.

#### Interpretation

Our study provides evidence from a large multicountry study that non-partner rape perpetration is quite prevalent among men in the general population across a range of diverse settings, and emphasises that a focus on rape prevention activities in childhood and adolescence is essential to prevent occurrence of rape. We also note that most men who rape a non-partner woman are likely to rape more than one woman (whether partner or non-partner) or also rape a man. Our findings provide confirmation of the importance across cultural and global settings of factors previously described to be associated with perpetration of rape in published literature from the USA and South Africa. Our study also provides evidence from population-attributable fractions and expressed reasons for rape that to address gender-inequitable social norms and gender-inequitable construction of masculinity is of high importance to prevent rape perpetration.

region and the countries are very culturally diverse. Moreover, the high consistency between associated factors described in South Africa and North America and those from countries of this region is notable. This finding suggests that this study’s results are of global relevance to the problem of non-partner rape perpetration (panel).

This study emphasises the importance of prevention of rape perpetration before it is committed, especially through interventions in childhood and adolescence. Complex approaches are needed, including structural interventions to reduce poverty, support better parenting, reduce exposure to child abuse,<sup>40</sup> and build more gender-equitable masculinity ideals.<sup>41</sup> Additionally, interventions at the society level are needed to strengthen laws and criminal justice responses to rape. Effective rape prevention clearly requires long-term strategies, including challenging of practices that are deeply rooted in cultural ideals of masculinity and sex hierarchy. Research into effective interventions and how to develop effective national prevention programmes is urgently needed.

#### Contributors

RJ was the lead author, and contributed to the study design, data collection at some sites, data handling, and data analysis. EF was the research coordinator of the study and contributed to the study design, data collection, data analysis, data interpretation, and writing of the report. TR was responsible for data handling, statistical analysis, and development of tables and figures. CG-M was a technical adviser on the

study and contributed to data interpretation and reviewing of the report. The listed authors were writing on behalf of the UN Multi-country Study team, which included the principal investigators and country study teams who contributed to the study implementation and data collection at each site. We also write on behalf of the steering committee and technical advisory group who guided the overall study design and implementation.

#### UN Multi-country Cross-sectional Study on Men and Violence study team

**Core research team:** Emma Fulu (study coordinator; Partners for Prevention); Rachel Jewkes (Medical Research Council, South Africa); Xian Warner, Stephanie Miedema, Tim Roselli, James Lang (Partners for Prevention).

**Country study teams:** *Bangladesh:* Ruchira Tabassum Naved (Principal Investigator [PI]), Hamidul Huque, Subrina Farah, Muhammad Mizanur Rashid Shuvra (International Centre for Diarrhoeal Disease Research, Bangladesh); Arthur Erken (United Nations Population Fund, Bangladesh); *China:* Wang Xiangxian (PI; Tianjin University, China); Fang Gang (Beijing Forestry University); Li Hongtao (Chinese Women's College and Anti-Domestic Violence Network); Zeljka Mudrovic, Wen Hua, Arie Hoekman, Elina Nikulainen, Bernard Coquelin, Mariam Khan (United Nations Population Fund, China); *Cambodia:* Wenny Kusuma, Clara Magariño Manero, Freya Larsen (UN Women Cambodia); Emma Fulu (PI), Xian Warner (Partners for Prevention); Saba Moussavi (independent consultant); *Sri Lanka:* Neloufer de Mel (PI; University of Colombo); Pradeep Peiris (Social Scientists' Association); Shyamala Gomez (independent consultant, social indicator team); Kamani Jinadasa (CARE Sri Lanka); *Indonesia:* Elli Nurhayati (PI; Rifka Women's Clinic); Saeroni, S.Ag (PI), Nurul Kodriati (PI; Rifka Annisa); Mohammad Hakimi, Dewi Haryani Susilastuti (Gadjah Mada University); Dwi Faiz, Anne Dixon, Elena Williams (UN Women); *Papua New Guinea (Bougainville):* Rachel Jewkes (PI), Yandisa Sikweyiya, Nwabisa Jama Shai (Medical Research Council, South Africa); Francesca Drapuluvik-Tinabar (National Statistics Office, Papua New Guinea); Carole Flore, Peterson Magoola, Anthony Agyenta (United Nations Development Programme, Papua New Guinea); Thomas Shanahan, Tracy Vienings (United Nations Development Programme Regional Pacific Centre).

**Steering committee:** Rachel Jewkes (Medical Research Council, South Africa); Claudia Garcia-Moreno (WHO); Ruchira Tabassum Naved (International Centre for Diarrhoeal Disease Research, Bangladesh); Kamani Jinadasa (CARE Sri Lanka); Tracy Vienings (United Nations Development Programme Regional Pacific Centre); Wenny Kusuma (UN Women Cambodia).

**Technical advisory group:** Rachel Jewkes (Medical Research Council, South Africa); Raewyn Connell (University of Sydney, Australia); Gary Barker (Instituto Promundo, USA and Brazil), Alan Greig (independent consultant, USA); Rahul Roy (AAKAR, India); Ravi Verma (International Center for Research on Women, India), Kalyani Menon Sen (independent consultant); Michael Flood (University of Wollongong, Australia). **PDA programmer:** Scott Johnson (University of Kentucky, USA).

#### Conflicts of interest

We declare that we have no conflicts of interest.

#### Acknowledgments

The study was funded by Partners for Prevention, a UN Development Programme, UN Population Fund, UN Women and UN Volunteers regional joint programme for prevention of gender-based violence in Asia and the Pacific. Funding for the national studies was provided by the UN Population Fund in Bangladesh and China, UN Women in Cambodia and Indonesia, and the UN Development Programme in Papua New Guinea. The study in Sri Lanka was funded by CARE. Partners for Prevention also received financial support from the Governments of Australia, the UK, Norway, and Sweden. The author CG-M in her personal capacity is responsible for the views expressed in this Article, and they do not necessarily represent the views, decisions, or policies of the World Health Organization. The UN Multi-country Study on Men and Violence was a collaborative effort and only made possible by the commitment, dedication, and hard work of all of the organisations and individuals involved, both internationally and in each of the study countries. We thank the more than 10 000 men and

3000 women who gave their time to participate in our study; our partner institutions and organisations in each of the study countries; the interviewers and supervisors who worked tirelessly, and often under difficult circumstances, to gather the data for this study; the study's technical advisers; members of the steering committee; members of the national working groups; Tim Farley (Sigma3 Services SARL, Switzerland) for reviewing this paper and providing technical advice; and all members of the Partners for Prevention team.

#### References

- Krug EG, Dahlberg LL, Mercy JA, Zwi AB, Lozano R, eds. Chapter 6: sexual violence. In: World health report on violence and health. Geneva: World Health Organization, 2002: 147–81.
- Jewkes R, Sikweyiya Y, Morrell R, Dunkle K. Gender inequitable masculinity and sexual entitlement in rape perpetration South Africa: findings of a cross-sectional study. *PLoS One* 2011; **6**: e29590.
- Barker G, Contreras JM, Heilman B, Singh AK, Verma RK, Nascimento M. Evolving men: initial results from the International Men and Gender Equality Survey (IMAGES). Washington, DC: International Center for Research on Women, 2011.
- Machisa M, Jewkes R, Lowe-Morna C, Rama K. The war at home. Johannesburg: GenderLinks, 2011.
- Senn CY, Desmarais S, Verberg N, Wood E. Predicting coercive sexual behaviour across the lifespan in a random sample of Canadian men. *J Soc Pers Relat* 2000; **17**: 95–113.
- Abbey A, Parkhill MR, BeShears R, Clinton-Sherrod AM, Zawacki T. Cross-sectional predictors of sexual assault perpetration in a community sample of single African American and Caucasian men. *Aggress Behav* 2006; **32**: 54–67.
- Tsai AC, Leiter K, Heisler M, et al. Prevalence and correlates of forced sex perpetration and victimisation in Botswana and Swaziland. *Am J Public Health* 2011; **101**: 1068–74.
- Jewkes R. Rape perpetration: a review. Pretoria: Sexual Violence Research Initiative, 2012.
- Malamuth NM, Sockloskie RJ, Koss MP, Tanaka JS. Characteristics of aggressors against women: testing a model using a national sample of college students. *J Consult Clin Psychol* 1991; **59**: 670–81.
- Jewkes R, Dunkle K, Nduna M, et al. Factors associated with HIV sero-status in young rural South African women: connections between intimate partner violence and HIV. *Int J Epidemiol* 2006; **35**: 1461–68.
- Knight RA, Sims-Knight JE. The developmental antecedents of sexual coercion against women: testing alternative hypotheses with structural equation modelling. *Ann NY Acad Sci* 2003; **989**: 72–85.
- Johansson A, Santtila P, Harlaar N, et al. Genetic effects on male sexual coercion. *Aggress Behav* 2008; **34**: 190–202.
- Fulu E, Jewkes R, Roselli T, Garcia-Moreno C. Prevalence of and factors associated with male perpetration of intimate partner violence: findings from the UN Multi-country Study on Men and Violence in Asia and the Pacific. *Lancet Global Health* 2013; published online Sept 10. DOI:[http://dx.doi.org/10.1016/S2214-109X\(13\)70074-3](http://dx.doi.org/10.1016/S2214-109X(13)70074-3).
- Garcia-Moreno C, Hansen HA, Ellsberg M, Heise L, Watts C. WHO multi-country study on women's health and domestic violence against women. Geneva: World Health Organization, 2005.
- Jewkes R, Dartnall E, Sikweyiya Y. Ethical and safety recommendations for research on perpetration of sexual violence. Pretoria: Sexual Violence Research Initiative, 2012.
- Greenland S. Applications of stratified analysis methods. In: Rothman KJ, Greenland S, eds. Modern epidemiology. Philadelphia: Lippincott, Williams and Wilkins, 1998.
- Hanley J. A heuristic approach to the formulas for population attributable fraction. *J Epidemiol Community Health* 2001; **55**: 508–14.
- White JA, Smith PH. Sexual assault perpetration and perpetration: from adolescence to young adulthood. *Criminal Justice Behaviour* 2004; **31**: 182–202.
- Kelly L, Lovett J, Regan L. A gap or a chasm? Attrition in reported rape cases. London: Home Office Research, Development and Statistics Directorate, 2005.
- Jewkes R, Christofides N, Vetten L, Jina R, Sigsworth R, Loots L. Medico-legal findings, case progression and legal outcomes in South African rape cases: a cross-sectional study. *PLoS Med* 2009; **6**: e1000164.

- 21 NSRRT (National Sex and Reproduction Research Team), Jenkins C. National study of sexual and reproductive knowledge and behaviour in Papua New Guinea. Monograph no. 10. Goroka: Papua New Guinea Institute of Medical Research, 1994.
- 22 Bradley C, Kesno J. Family and sexual violence in PNG: an integrated long-term strategy. Report to the Family Violence Action Committee of the Consultative Implementation and Monitoring Council. Discussion paper no. 84. Port Moresby: Institute of National Affairs, 2001.
- 23 Braithwaite J, Charlesworth H, Reddy P, Dunn L. Reconciliation and architectures of commitment : sequencing peace in Bougainville. Canberra: Australia National University Press, 2010.
- 24 Wilkinson D, Bearup LS, Soprach T. Youth gang rape in Phnom Penh. In: Jejeebhoy SJ, Shah I, Thapa S, eds. Sex without consent: young people in developing countries. New York: Zed Press, 2005: 158–68.
- 25 Wood K. Contextualising group rape in post-apartheid South Africa. *Cult Health Sex* 2005; **7**: 303–17.
- 26 Jewkes R, Nduna M, Jama-Shai N, Dunkle K. Prospective study of rape perpetration by young South African men: incidence & risk factors. *Plos One* 2012; **7**: e38210.
- 27 Malamuth N. Criminal and non-criminal sexual aggressors. Integrating psychopathy in a hierarchical-mediational confluence model. *Ann NY Acad Sci* 2003; **989**: 33–58.
- 28 Changing men in Southern Africa. Morrell R, ed. Pietermaritzberg/London: University of KwaZulu Natal Press/Zed Press, 2001.
- 29 Connell R. Gender and power: society, the person and sexual politics. Palo Alto: University of California Press, 1987.
- 30 Bourgois P. In search of masculinity—violence, respect and sexuality among Puerto Rican crack dealers in East Harlem. *Br J Criminol* 1996; **36**: 412–27.
- 31 Jewkes R, Dunkle K, Koss MP, et al. Rape perpetration by young, rural South African men: prevalence, patterns and risk factors. *Soc Sci Med* 2006; **63**: 2949–61.
- 32 Calhoun KS, Bernat JA, Clum GA, Frame C. Sexual coercion and attraction to sexual aggression in a community sample of young men. *J Interpers Violence* 1997; **12**: 392–406.
- 33 Borowsky IW, Hogan M, Ireland M. Adolescent sexual aggression: risk and protective factors. *Pediatrics* 1997; **100**: e7.
- 34 Dunkle KL, Jewkes R, Murdock DW, Sikweyiya Y, Morrell R. Consensual male–male sexual activity and male–male sexual violence: prevalence and associations with HIV infection from a population-based study in South Africa. *PLoS Med* 2013; **10**: e1001472.
- 35 Whitaker DJ, Le B, Hanson RK, et al. Risk factors for perpetration of child sexual abuse: a review and meta-analysis. *Child Abuse Neglect* 2008; **32**: 529–48.
- 36 Seto MC, Lalumière M. What is so special about male adolescent sexual offending? A review and test of explanations through meta-analysis. *Psychol Bull* 2010; **136**: 526–75.
- 37 Casey EA, Beadnell B, Lindhorst TP. Predictors of sexually coercive behaviour in a nationally representative sample of adolescent males. *J Interpers Violence* 2009; **24**: 1129–47.
- 38 Abbey A. Alcohol's role in sexual violence perpetration: theoretical explanations, existing evidence and future directions. *Drug Alcohol Rev* 2011; **30**: 481–89.
- 39 Fulu E, Warner X, Miedema S, Jewkes R, Roselli T, Lang J. Why do some men use violence against women and how can we prevent it? Quantitative findings from the United Nations Multi-country Study on Men and Violence in Asia and the Pacific. Bangkok: UNDP, UNFPA, UN Women, and UNV, 2013.
- 40 Knerr W, Gardner F, Cluver L. Improving positive parenting skills and reducing harsh and abusive parenting in low- and middle-income countries: a systematic review. *Prev Sci* 2013; **14**: 352–63.
- 41 Ricardo C, Eads M, Barker G. Engaging boys and young men in the prevention of sexual violence: a systematic and global review of evaluated interventions. Pretoria: Sexual Violence Research Initiative, 2012.